Nutrition News

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DENTAL HEALTH BEGINS WITH MOTHER'S DIET

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Effective control of dental disease must begin early. That means control must be started long before the child's first visit to the dentist at the recommended age of three years. Control should be started at least prenatally and preferably before conception.

The quality and resistance of teeth is markedly influenced by the diet consumed by the pregnant mother. Prenatal factors affect the deciduous teeth far more than do postnatal factors. Even the quality of the portion of deciduous teeth formed after birth is influenced by prenatal diet.

The dentin and enamel of deciduous teeth starts calcifying about the fourth fetal week. Tooth buds must be properly formed before that time. Though little is known of specific human dietary requirements for the developing tooth bud, animal experimentation has shown that vitamin A plays a strategic role. Most of the buds for even the permanent teeth are formed before birth.

A sufficient dietary supply of all nutrients must be provided during pregnancy to insure maternal and child health as well as good development of teeth and surrounding bone in the child. The fetus is no longer considered a parasite, and dietary deficiencies harmful only to the mother. If a mother does not eat properly prior to pregnancy, even a good prenatal diet will not assure the best nutrition for the developing fetus. It is of grave concern that the poorest diets are those of adolescent girls and young women of child-bearing age.

The maternal diet during pregnancy may have both direct and indirect effects upon the quality of teeth. Children born of mothers on poor diets have low pediatric ratings. Their lowered resistance results in a greater number of illnesses during the first months of life. Even minor upsets disturb nutrition during infancy when so much of the deciduous and permanent tooth development occurs.

Although a considerable portion of the deciduous teeth is formed before birth, they are completed after birth. In general, postnatal enamel is less homogeneous than prenatal, and sometimes shows severe deformity. Two-thirds of all pitting and irregular formation of enamel (hypoplasia) observed on permanent teeth occurs during this infancy period, before the child is ten months old. These malformations are present this early, even though not clinically observable until the teeth erupt when the child is six to twelve years old.

This poor development is not customarily associated with specific disease conditions such as measles, as formerly taught. Instead it seems to accompany the more chronic and apparently lesser disturbances of health and nutrition during the first year of life. Such disturbances are more frequent when the mother had a poor prenatal diet. Therefore, promotion of better health and better structural formation of teeth requires careful supervision of both pre- and postnatal diets. When nutrition during pregnancy is inadequate, the fetus not only suffers to a greater extent than the mother, but these adverse effects are prolonged after birth.

Whether or not human congenital malformations can be induced by or are related to poor maternal diet during pregnancy can never be tested experimentally. The solution to the problem must be sought by careful analysis of records of areas where food intakes have been seriously curtailed. From such study, it appears that a majority of infants with marked congenital defects are born of mothers whose diets during pregnancy are inadequate. Animal experiments provide highly suggestive data associating

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dietary deficiencies with malformations of the oral region.

We do not know just what structural changes besides malformations of the oral tissues and hypoplasia of the teeth may result from nutritional inadequacies. Observed variations in resistance of teeth indicate there are other differences, possibly in chemical content and structural arrangement.

Again, animal experimentation has provided challenging data. Rats and hamsters have significantly greater caries susceptibility when raised on a caries-producing ration from the period of conception to maturation than when this diet is fed from ten days after birth, or after the teeth are formed. On the other hand, the earlier good diets are fed, the greater the resistance of the teeth.

Such findings show influences at work far beyond those that would be expected if carious destruction was determined solely by factors operating after eruption of teeth. They suggest, instead, that caries susceptibility is markedly influenced by diet and nutrition during the entire period of tooth development, pre- as well as postnatal.

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Glances AT NUTRITION RESEARCH

The kind and amount of food eaten profoundly affects body chemistry, the internal environment which determines human health, growth, and development. Research reported here further demonstrates that a state of good nutrition depends primarily upon adequate intake of foods of high nutritive value.

Milk Aids Child Growth—Six quarts of milk per week added to the diet of 41 children suffering from chronic nutritive failure resulted in their improved growth and development. Over a period of 20 months, the children receiving this milk supplement gained more in both height and weight than did similar children not receiving the extra milk. They showed an increase of: 73 percent in growth rate; 54 percent in speed of development; 34 percent in direction of development; and 24 percent in quality of growth. Treatment with vitamin supplements alone does not result in sustained improvement in child growth, unless the quality and quantity of food the child eats is adequate.

—*J. Am. Med. Assn. 148:1376(April) 1952.*

Vitamin B_{12} Aids Child Growth—Improved growth rates were observed in 23 out of 36 school children with previous growth failure when they orally received 10 mcg. of vitamin B_{12} daily for 6 or 16 weeks. The children showing favorable growth response to vitamin B_{12} showed simultaneous improvement in their caloric intake, food choice, and diet composition. Unsupervised diets, poor preparation and selection of foods, and inadequate milk intake were listed by the authors as dietary causes of growth failure.

—*J. Clin. Nutr. 1:17 (Sept.-Oct.) 1952*.*

Amino Acid Deficiencies In Man—A diet poor in one of the essential amino acids may be more harmful to health than one poor in total protein. This conclusion was reached from studies of the effects of amino acid deficiencies in adult man, infants, and animals. Dietary lack of tryptophane, methionine, and isoleucine seriously and rapidly lower the level of plasma proteins in infants fed a synthetic diet.

—*J. Clin. Nutr. 1:44 (Sept.-Oct.) 1952*.*

Critical Calcium Lack In Bataan—While the rice enrichment program in Bataan, started in 1948, has resulted in improved clinical health of the people, there still remains a critical dietary lack of calcium and undesirably low intakes of riboflavin and vitamin C. This was revealed by a recent nutrition resurvey consisting of chemical, dietary, and clinical studies of 200 persons there, 64 percent of whom were examined previously in 1948 and 1950. The rice enrichment has brought about major changes in the intake of thiamine and iron accompanied by favorable chemical and clinical changes related to these nutrients. The evidence does not indicate increased consumption of milk (a primary source of calcium and riboflavin) or in leafy vegetables, tomatoes, or citrus fruit (rich in vitamin C).

—*J. Nutrition 46:239 (Feb.) 1952.*

*New Journal published bi-monthly by the Nutritional Press, Allentown, Pennsylvania.

TIMELY TOPICS

Dr. Radusch

Dr. Radusch holds a B.A. and M.S. with a major in nutrition as well as her D.D.S. Since 1924 she has been associated with the School of Dentistry, University of Minnesota, in the Department of Periodontia as Associate Professor on a part time basis. She also has a private practice in general dentistry. She is the author of numerous articles on diet as related to children and to periodontal condition. Her research has been more especially in the latter field.

UNICEF'S Cup of Milk

UNICEF aid today takes two forms aimed at better nutrition of children the world over. One is a child feeding program which includes providing milk for children, and pregnant and lactating women. The other provides equipment for pasteurizing, bottling, and refrigerating, and for drying and other processing of milk.

Consumer Consultants

Sixteen women have been appointed to serve as consumer consultants to the Food and Drug Administration's district offices. The Administration's decision to launch the consumer consultant program was based in part on its experience in solving problems incident to establishing food standards. In past years consumer groups have been of real service in connection with these problems, but there has been no formal arrangement for obtaining their assistance.

NUTRITION COUNSELING IN WEIGHT CONTROL

By Charlotte M. Young, Ph. D., Professor of Medical Nutrition
School of Nutrition, Cornell University

Weight problems have been a large part of my consultation work in the Student Medical Clinic at Cornell during the past ten years. In our experience, overweight patients fall into three types:

1. Those with poor food habits and little knowledge of food values, but no emotional problems.
2. Those with superficial emotional problems such as the patient who eats to relieve anxieties.

These patients need emotional support, help to develop insight into what food and eating means to them, plus a satisfying diet to help them reduce while resolving emotional problems.

3. Those overweight persons who have deep emotional disturbances.

For these, attempt at weight loss without competent psychiatric help is a waste of the patient's and the therapist's time; even worse, it may be harmful to the patient by developing in him further anxieties and a sense of guilt since he is unable to cooperate. Some screening device should segregate these patients and they should be redirected for psychological help as soon as possible.

Regardless of age group, we have been impressed with certain fundamental needs for motivation; for remotivation; for regular contacts with the therapist; for a physically satisfying diet; and finally, for an adequate follow-up period after weight reduction.

The foremost need is for motivation in terms meaningful to the patient. Simple referral by the physician and his recommendation of the need to reduce is not enough; neither health reasons nor threats of immediate or eventual disability are meaningful to many. In initial visits, the main concentration may well be on helping the patient find a motivation to lose weight which does have meaning to him. Sometimes several visits spent mostly in "visiting" and probing are necessary before one helps the patient discover a reason realistic to him. These reasons cover a wide range. Many seem peculiar and often superficial to us, but each has a meaning to the person involved. The reason may be a need to wear "out-grown" clothes; or that the bathing suit season and its revelations are in the offing; or a wedding or other occasion which will put the patient in the public eye; or a photograph which has made him aware of his profile; or the need to pass some weight requirement. Scare tactics, except for rare patients, are not good and often result in losing the patient.

Once our first type patient has been motivated and shows progress, his success in itself and his feeling of satisfaction and pride of accomplishment carry him along.

For the second type, the anxious and insecure patient, emotional support is essential. Also, he needs periodic **remotivation** until he learns to cope with his anxieties and until his new pattern of eating becomes habit. Often he needs **new motivation** as the old one becomes obsolete or is partially achieved. Regular visits closely spaced are important. There is a need to "answer to someone outside yourself." Visits once a week are desirable; in our experience for most patients at these early stages, less frequent visits mean less progress. **Setting of specific small goals** of fairly quick attainment, both in terms of weight loss and changes in diet habits, are important. Looking only at long time goals (which patients usually do) is very discouraging.

Helping the patient to find satisfaction—both in terms of appetite and freedom from physical hunger—by means of the prescribed diet is important and is a contribution peculiarly that of the person familiar with food in all its aspects. The use of the high protein, moderate fat diet developed by Dr. Margaret Ohlson and her coworkers at Michigan State College has helped in the important aspect of an acceptable and satisfying diet.

Follow-up visits of once a month after weight reduction are imperative until new habits are firmly ingrained.

SEEKING OPTIMUM HEALTH FOR YOUTH

By Harriet W. Williams, Science Teacher
Lexington Junior High School, Lexington, Kentucky

Integration of courses brings students to greater understanding of what is taught and greater use of that information. In our ninth grade, many were completing their last year of formal training. Our guidance course became a help in meeting their problems. Their plainly expressed opinions gave us insight on home conditions. After studying the Science Research Associates Youth Inventory of these students, we felt we had found a clue to reaching them on their problems related to food and health which their own inventories disclosed.

We have city-wide nutrition instruction from grade one upward. Our home economics teachers have given a course in nutrition to the majority of the city teachers. Our girls had home economics in seventh grade with training and emphasis on eating habits. Somewhere our program was failing for our teen-agers. Students did not see a connection between the information and their own eating and health habits.

If the study of the human body was to be effective in the general science course, then it must be made personal. One answer was use of the Wetzel Grid.

A three-week unit grew out of study of the parts of the body and their functions. When digestion was reached, the nutrition unit was inaugurated. Students kept personal diaries for a week. Each student checked a sheet that gave his sleeping, eating, and playing activities, and the time allotted to each. These were anonymously evaluated and discussed in class.

A study was made of each student's growth record of three or more years. His record was plotted on a Wetzel Grid. It gave him an overall picture of his body type, his progress toward growing up, the quality of his growth, and any disturbance that occurred.

Heights and weights were taken on the day each filled out the Grid. Students were able to see progress since the first of the school year. To many it was a revelation to see a steady climb toward being "grown up."

The shock when the curve was not

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DID YOU KNOW ?

—that cows can now be positively identified under a new system of classification of noseprints recently developed with the assistance of FBI experts?

—that ancient Romans and Greeks used the soot of burned butter as medicine for sore eyes?

—that whaleburgers, smoked whale meat, and whale steaks will soon be available in many eastern and midwest markets?

—that the working time required to buy one quart of milk in the United States is about 8 minutes? In the U. S. S. R. it is about 52 minutes?

—that ultraviolet and infrared lights can help the United States produce more food?

—that Cheddar cheese got its name from the little village of Cheddar, England where the recipe for that type of cheesemaking originated?

—that the number of children participating in the National School Lunch Program has more than doubled in the past 7 years—from less than 4 million in 1944 to more than 9 million in 1951-1952?

—that in the first nine months of 1952, almost 475 million gallons of ice cream were produced in the United States?

THINGS YOU'LL LIKE TO READ

Nutrition and Diet Therapy in Relation to Nursing—Marie V. Krause. Philadelphia: W. B. Saunders Company, 1952. $4.25.

This text is in four parts: basic nutrition; diet therapy; nutrition in pregnancy, lactation, infancy, and childhood; food selection, cookery rules, and service. The book stresses to the nurse what parts nutrition and diet therapy play in the maintenance of health and prevention of disease.

Kitchen Strategy—Leona M. Bayer, M. D., and Edith Green. Springfield, Illinois: Charles C. Thomas, Publisher, 1952. $3.75.

This is a practical and easy-to-read handbook on family nutrition which has sections on: basic food elements; menu planning; menus for common ailments; strategic buying, cooking and serving; and family cookery.

Food For Life—ed. by Ralph W. Gerard, M. D. Chicago: The University of Chicago Press, 1952. $4.75.

This is an outstanding book. It gives a comprehensive and sound account of the use of food for life. Accurate and often amusing drawings represent the physical and chemical processes involved. Joint authors with the editor are Richard J. Block, Ph. D., Norman Jolliffe, M. D., Clive M. McCay, Ph. D., Sedgwick E. Smith, Ph. D., and Samuel Soskin, Ph. D., M. D.

Here are new editions of several standard reference books that are valuable to nutritionists, teachers, public health workers, and dietitians. Each contains considerable revision and some addition from former editions. **Nutrition and Diet in Health and Disease, 6th Ed.**—James S. McLester, M. D., and William J. Darby, M. D., Ph. D. Philadelphia: W. B. Saunders Company, 1952. $10. **Diseases of Metabolism, 3rd Ed.**—ed. by Garfield G. Duncan, M. D. Philadelphia: W. B. Saunders Company, 1952. $15. **Chemistry of Foods and Nutrition, 8th Ed.**—Henry C. Sherman, Ph. D. New York: The Macmillan Company, 1952. $6.

SEEKING OPTIMUM HEALTH FOR YOUTH

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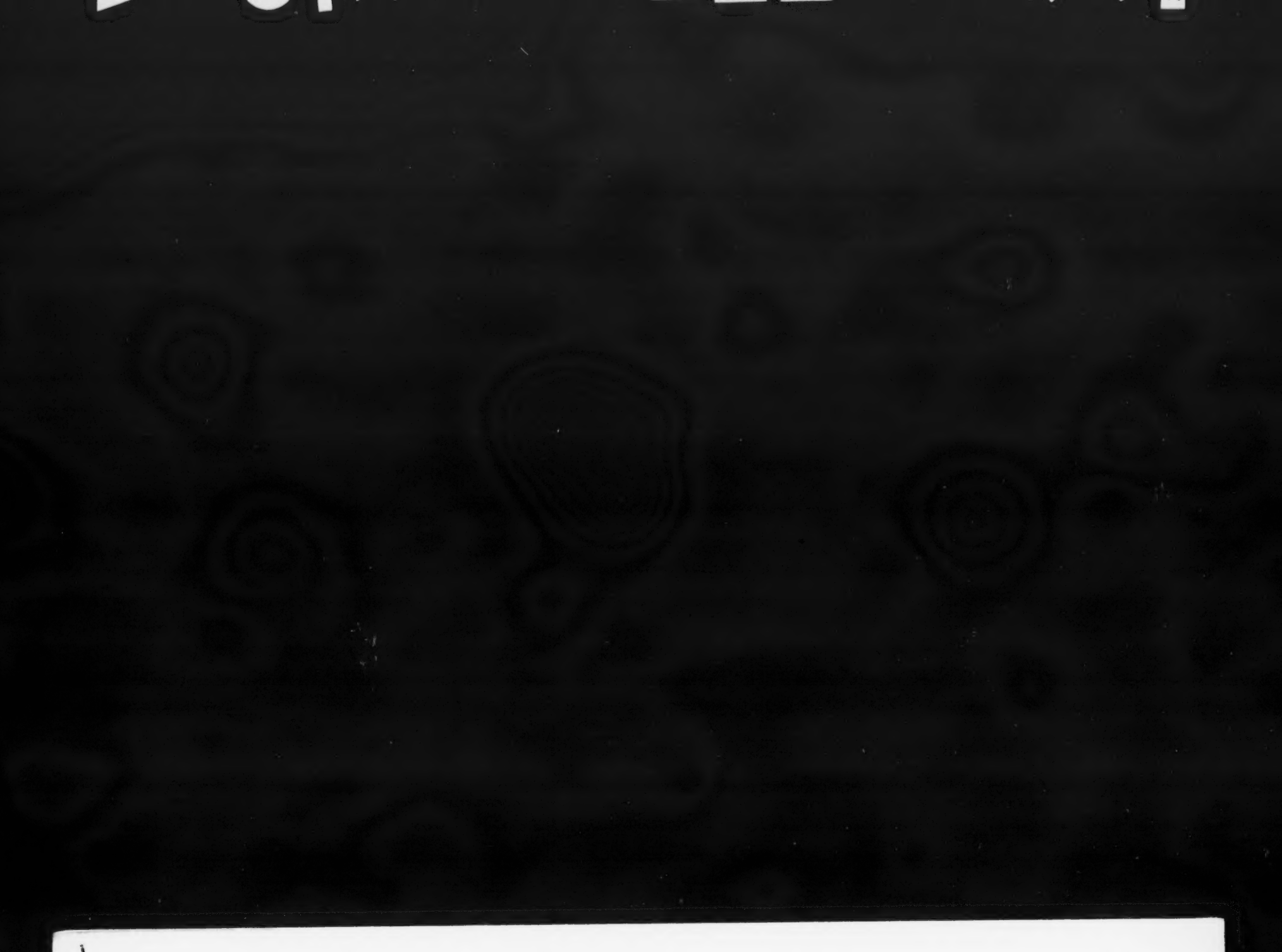
upward brought on the question, "Why?". Analysis by the students showed many that allergies, accidents, illnesses, or emotional disturbances had interferred. To others there was no logical explanation until we brought up their week's diaries. The students decided poor health habits might be responsible, that food habits might be weakest. With a basic food chart as a guide, each pupil tried to find where he failed to meet it. From this beginning, we studied why the basic foods are a guide for good eating.

Each student's diary was clipped to his Wetzel Grid for future reference. At six-week intervals, heights and weights were checked. Slumps in growth were accounted for by the students, progress in growth was worked for with diligence. It became a game that brought, to those who played by the rules, the things they most wanted: clear skin, pep, cheerful outlook, a better figure, and more physical coordination for sports and fun.

The boys showed unceasing interest. Many astonished their parents by eating foods refused before. The girls, harder to convince because of fear of getting fat, became more interested as magazines stressed dietetically sound reducing diets and clear skin diets.

Parents were cooperative and appreciative. Medical aid was sought for chronic conditions ignored before.

We feel that the Wetzel Grid proved to each student that what he ate had a relation to his growth and health. Many learned that every girl couldn't be a size 12, and every boy a "Tarzan," but that each could reach a goal that meant more happiness, success, and health. Foods that teenagers often rebel against, milk, green vegetables, and fruit, became part of their diet again.

We now use the Wetzel Grid to find problems before students reach ninth grade. Physical education, home economics, guidance, and general science classes are integrating the reports to help students have better health habits. But the thrill is seeing them seek information to help themselves.